

2 June 2005

FILE

Ms. Andrea Jensen Santa Rosa Fire Department 955 Sonoma Avenue Santa Rosa, CA 95404

Re: Quarterly Groundwater Monitoring Report - Second Quarter 2005

Former Santa Rosa Imports 900 Santa Rosa Avenue Santa Rosa, CA 95404 Case No. 1TSR263 Clearwater Project No. AB002C

Dear Ms. Jensen:

Enclosed pleas find a copy of the *Second Quarter2005 Groundwater Monitoring Report* prepared by the Clearwater Group (Clearwater) for the above-referred site. Should you have any questions, please call me at 510-307-9943 ext. 231.

For your information, your office called that you have received our Soil Remediation Plan dated on 24 February 2005, although you have not reviewed it. We will submit the soil remediation permit application when the design for new building is complete for the use of building permit. Your help to make this site closure project moving forward is very appreciated.

Sincerely,

Clearwater Group

Jim Ho

Principal Engineer

Cc: Ms. Joan Fleck

North Coast Regional Water Quality Control Board



2 June 2005

FILE

Ms. Joan Fleck North Coast Regional Water Quality Control Board 5550 Skylane Boulevard, Suite A Santa Rosa, CA 95403

Re: Quarterly Groundwater Monitoring Report - Second Quarter 2005

Former Santa Rosa Imports 900 Santa Rosa Avenue Santa Rosa, CA 95404 Case No. 1TSR263 Clearwater Project No. AB002C

Dear Ms. Fleck:

Enclosed pleas find a copy of the *Second Quarter 2005 Groundwater Monitoring Report* prepared by the Clearwater Group (Clearwater) for the above-referred site. Should you have any questions, please call me at 510-307-9943 ext. 231.

For your information, we will submit the soil remediation permit application to the Fire Department when the design for new building is complete for the use of building permit. Your help to make this site closure project moving forward is very appreciated.

Sincerely,

Clearwater Group

Jim Ho

Principal Engineer



2 June 2005

FILE

Ms. Joan Fleck North Coast Regional Water Quality Control Board 5550 Skylane Boulevard, Suite A Santa Rosa, CA 95403

Re: Quarterly Groundwater Monitoring Report - Second Quarter 2005

Former Santa Rosa Imports 900 Santa Rosa Avenue Santa Rosa, CA 95404 Case No. 1TSR263 Clearwater Project No. AB002G

Dear Ms. Fleck,

At the request of Spaceco Storage, Inc. and Mr. Franklin Wolmuth (clients), Clearwater Group (Clearwater) has prepared a Quarterly Groundwater Monitoring Report for the subject Site. This report presents the Second Quarter 2005 groundwater monitoring activities and associated results. The groundwater samples were collected in accordance with standard environmental field protocols, and were submitted to a California-certified analytical laboratory for analysis of Total Petroleum Hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE).

BACKGROUND INFORMATION

Site Description

The site is located on the southeast corner of the intersection of Santa Rosa Avenue and Bennett Valley Road (Figure 1). Highway 12 (elevated) is located immediately north of the site, across Santa Rosa Avenue. The elevation of the site is approximately 160 feet above mean sea level (MSL); and regional topography slopes gently to the west-southwest.

The site is paved, leveled, and set in an area of mixed residential and commercial use. The site is currently used as an automobile smog testing and certification facility.

UST Removal History

The site previously operated as an automobile service station until 1986. All underground storage tanks (USTs) were removed from four separate excavations at the site by Baseline Environmental Consultants in 1987. The former USTs (Excavations #2 and #4) located on the northern portion of the site were used to store gasoline. The former UST (Excavation #1) located south of the onsite building was also used to store gasoline. One former UST (Excavation #3) located southeast of the on-site building was used to store used motor oil. Product lines and dispensers were also removed during the tank removal. Former UST excavation sizes and excavation locations are shown on Figure 2.

Limited over-excavation was performed around all former UST pits, except for the one located directly north of the building, which contained three 550-gallon USTs. Results of excavation soil sample analyses indicated that residual petroleum hydrocarbons were present in soils proximal to each former UST basin. Results of USTs removal were presented in Baseline Environmental Consultants' report dated December 1, 1987.

Investigation History

Between 1989 and 2000, approximately 20 soil borings were drilled and six monitoring wells were installed to determine the extent and level of the contamination resulting from the former USTs. The soil boring and monitoring well locations are also shown in Figure 2. The monitoring well construction data is listed in Table 1.

On 13 December 2001, Clearwater supervised drilling and installation of two remedial test wells that included one dual-phase remedial well (DPW-1) and one air sparge well (AS-1). These wells were used to perform tests for simultaneous groundwater extraction (GWE) with soil-vapor extraction (SVE) and air sparging.

On 6 and 7 February 2002, Clearwater performed a brief step-drawdown test, combined GWE/SVE tests, and solo SVE test on DPW-1. It was found that mass recovery rates for SVE are likely to be poor, based on low airflow rates and relatively low concentrations of extractable petroleum hydrocarbons in the air stream. An air-sparging test was also performed on well AS-1, with unfavorable results obtained due to the low soil permeability.

On 25 and 28 January 2005, Clearwater drilled 12 soil borings to delineate the range and volume of soils to be excavated during upcoming site remediation. All the borings were drilled to 16 feet below ground surface (bgs). Based on the analyzed data and previous sampling results performed between 1989 and 2000, impacted soil is found within the interval between eight feet and 15 feet bgs. The estimated total area of soil excavation will be approximately 3,800 square feet. Approximately 2,110 cubic yards of soil will be excavated.

Hydrogeology

The subsurface is generally comprised of clays to a depth of approximately 10 to 15 feet bgs underlain by sandy clays and clayey sands to a depth of at least 20 feet bgs. However,

comparatively, more coarse grain sediments appear between 10 to 15 feet bgs. The sand appears to grade laterally into sandy gravel south and southwest of the site.

Historically, depth to groundwater has ranged from approximately 6 to 16 feet bgs, with groundwater generally flows toward the southwest direction; although flow direction has found ranged from west-southwest to south-southwest. Table 2 shows historical water level data in monitoring wells.

Contaminants of Concern

The predominant hydrocarbons, which appear to have been released to the subsurface from the former UST system, consist of gasoline compounds. Specific compounds or compound groups, which have been consistently detected, include total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Although Methyl tertiary butyl ether (MTBE) has been detected previously using EPA Method 8020; however, confirmation analyses by EPA Method 8260B indicate that this compound is not present at detectable levels. Quarterly monitoring since March 2001 has identified MTBE by EPA Method 8260B in only MW-5 with a maximum of 2.4 microgram per liter (µg/L) sampled in November 2001. No MTBE was detected above Method Reporting Limit on site since the third quarter 2004. Cumulative groundwater analytical data is also included in Table 2. Therefore, only TPH-g and BTEX are the concerned compounds at the site.

Estimated Mass of Dissolved-Phase Hydrocarbons

The extent of dissolved-phase hydrocarbon compounds in groundwater had been delineated with the existing monitoring well network. The core of the plume appeared to be located in the area around and immediately downgradient of the former UST systems.

The extent of the dissolved-phase TPH-g plume was approximately 250 feet long along the direction of measured hydraulic gradient and 175 feet wide perpendicular to the gradient. Maximum historical TPH-g and benzene concentrations from on-site monitoring wells are 140,000 micrograms per liter (μ g/L) and 6,200 μ g/L, respectively, since February 2000. As a result, it was estimated that approximately 65 lb (or 11 gal.) of gasoline hydrocarbons resided as a dissolved-phase in groundwater.

A cumulative groundwater analytical data is presented in Table 2. The historical data suggests that groundwater sampled from cross-gradient wells (i.e., MW-4 and MW-6) is not contaminated. Although historical sampling results indicate that the plume is relatively stable, concerned hydrocarbons concentrations in impacted wells MW-1, MW-2, and MW-3 display a decreasing trend over the past few years (see Figures 6A, 6B, and 6C).

Estimated Volume of Sorbed-Phase Hydrocarbons To Be Excavated

The "footprint" of sorbed-phase hydrocarbons in soil had been previously delineated as an ellipse, elongated toward the southwest. The lateral extent of impacted soil was limited mostly to beneath the subject property. Based on the most recent 25 and 28 January 2005 soil sampling

results, the estimated aerial extent of soil with sorbed-phase hydrocarbon compounds that required excavation was approximately 3,800 square feet. Sorbed-phase concentrations appear to be highest at the average depth of the capillary fringe (i.e. approximately 10 feet bgs). However, the detectable soil concentrations generally ranged from approximately eight to 15 feet bgs (7 feet thick). Based on the above data, approximately 26,600 ft (990 cubic yards) of impacted soils under the site will be excavated and backfilled with clean soil. Excavated soil presumably not contaminated above eight feet bgs will be sampled and reused for backfilling.

QUARTERLY MONITORING ACTIVITIES

Groundwater Gauging

On 11 May 2005, Clearwater performed quarterly gauging and sampling on six monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. An electronic water level indicator was used to gauge depth to water in the wells prior to purging and sampling. All wells were checked for the presence of Light Non-Aqueous Phase Liquid (LNAPL) gasoline prior to purging. All groundwater gauging and sampling work was performed in accordance with Clearwater's Groundwater Monitoring and Sampling Field Procedures presented in Appendix A.

Groundwater Purging

The wells were purged of groundwater until water quality parameters (e.g. temperature, pH and conductivity) stabilized; which occurred upon removal of approximately three wet casing volumes. Groundwater quality parameters and well purging information were recorded in the field at the time of monitoring. The field recorded purging data is presented in Appendix B.

Purging devices were decontaminated between wells in an Alconox® wash followed by double rinsing with clean tap water to prevent cross-contamination. Purge water and rinseate were stored on site in labeled 55-gallons drums pending future removal and disposal.

Groundwater Sampling

Following recovery of water levels to at least 80% of their static levels, groundwater samples were collected from the monitoring wells using disposable polyethylene bailers. Samples were labeled, documented on a chain-of-custody form, and placed on ice in a cooler for transport to the analytical laboratory.

Laboratory Analysis

Groundwater samples were analyzed by Kiff Analytical, a California State-certified laboratory located in Davis California, for concentrations of TPH-g, BTEX, and MTBE using EPA Method 8260B.

QUARTERLY MONITORING RESULTS

Groundwater Elevation and Flow

The depth to water ranged from approximately 5.05 feet bgs (MW-2) to 8.81 feet bgs (MW-5). Similar to the third and fourth quarter 2004 and the first quarter 2005 observations, monitoring wells MW-2 and MW-5, respectively, had a minimum and a maximum depth to water found during this quarterly event. Overall groundwater elevation observed in this quarter was approximately one foot higher than the elevation observed in the first quarter 2005. Depth to water data combined with casing elevation data were used to construct a groundwater elevation map, which is shown in Figure 3. Similar to the data obtained during the third and fourth quarters of 2004 and the first quarter 2005, the measured groundwater elevations obtained during this quarter suggest that a groundwater "mound" still exists at the site near MW-2. The predominant groundwater flow during this quarter was in the southwest direction. The calculated horizontal hydraulic gradient in the southwest direction was approximately 0.02 ft/ft. Groundwater flow near down gradient well MW-3 is relatively low compared with the flow in the southwest direction.

Laboratory Analytical Results

Although no measurable thickness of LNAPL was observed in the monitoring wells at the time of this sampling event, petroleum-type sheens were observed on samples collected from monitoring wells MW-1 and MW-2. During this monitoring event, high gasoline range hydrocarbons were only detected in monitoring wells MW-1 and MW-2. The highest TPH-g concentration detected was 42,000 μg/L in MW-2, and the highest benzene concentration of 1,500 μg/L was detected in MW-1. Although TPH-g concentrations collected in monitoring wells MW-1 through MW-3 during this monitoring event were generally lower compared with those of the third and fourth quarter 2004 and the first quarter 2005 monitoring events, it is worth noting that THP-g concentration detected in down gradient monitoring well MW-3 was reduced from 3,300 μg/L (fourth quarter 2004) to 370 μg/L (first quarter 2005) and from 370 μg/L (first quarter 2005) to 120 μg/L. Benzene also was not detected in MW-3. Although the only hydrocarbon compound detected in well MW-5 was TPH-g, its concentration seemed to reach an asymptotic level of approximately 100 μg/L. All the TPH-g and BTEX concentrations at MW-6 and MW-4 remained less than detection limits. No MTBE was detected above Method Reporting Limit.

TPH-g and benzene concentration contours are shown on Figures 4 and 5. The sample analytical data for this quarterly monitoring event are also included in Table 2. Copies of the laboratory report and chain-of-custody form are attached in Appendix C.

Evaluation of Hydrocarbon Degradation

Natural attenuation often exists within a petroleum hydrocarbon plume, which is demonstrated with a reduction of hydrocarbon concentrations over time. It especially occurs at a site that has experienced source removal and/or active remediation, so that natural attenuation processes can overtake the rate at which contaminants partition from the sorbed-phase into the dissolved-phase. Degradation of hydrocarbons often takes place at the "first-order" rate. The degradation constants

can be estimated using either observed contaminant concentrations from monitoring wells or estimated plume mass, if the plume has been delineated.

First-order decay rates for TPH-g and benzene beneath this site have been estimated using historical monitoring data obtained from for wells MW-1, MW-2 and MW-3. Degradation rate constants for TPH-g and benzene were determined by fitting an exponential curve with the sampled concentrations against time. Estimated degradation rate constants for TPH-g and benzene are shown on the fitted equation from each well. The results are presented in Figures 6A, 6B, and 6C. The estimated first-order degradation rate constants for benzene in wells MW-1, MW-2, and MW-3 are 0.02 per day, 0.07 per day, and 0.20 per day, respectively; and the estimated rate constants for TPH-g in MW-1, MW-2, and MW-3 are 0.02 per day; 0.01 per day; and 0.21 per day, respectively. Compare the estimated degradation constants determined from these three wells, both TPH-g and benzene degrade at rates range approximately from three to 20 times faster in down gradient area near MW-3. Because monitoring wells MW-1 and MW-2 are closer to the former UST area than MW-3, natural attenuation near the area either is insignificant or anaerobic biodegradation dominates. This postulation is consistent with the hydrocarbon distributions presented in Figures 4 and 5.

Summary of Monitoring Results

Based on the second quarter 2005 groundwater monitoring, the following findings are obtained:

- Local groundwater elevation contours once again suggest that a groundwater "mound" may still exist at area between wells MW-2 and MW-4. The principal groundwater flow was in the southwest direction. The calculated horizontal hydraulic gradient associated with the major flow was approximately 0.02 ft/ft.
- Sampled TPH-g and benzene concentrations are consistently higher in monitoring wells MW-1 and MW-2 since February 2000.
- Although TPH-g concentrations obtained during this monitoring event were generally lower compared with those sampled from the fourth quarter 2004 and the first quarter 2005, maximum TPH-g and benzene concentrations were 42,000 μ g/L and 1,500 μ g/L in MW-2 and MW-1, respectively, during this quarter.
- The only hydrocarbon detected in down gradient well MW-5 was TPH-g. Its concentration seems to reach an asymptotic level of approximately 100 µg/L.
- THP-g concentration detected in down gradient monitoring well MW-3 was greatly reduced from 3,300 μg/L (fourth quarter 2004) to 120 μg/L. Benzene has not been detected in MW-3 since the fourth quarter 2004. Concentration of hydrocarbons at cross-gradient wells MW-6 and MW-4 remains less than their method reporting limits.
- Both TPH-g and benzene degrade at rates range approximately from three to 20 times faster in down gradient well MW-3 than the rates observed in wells MW1 and MW2.

CONCLUSIONS

- Both magnitude and difference of TPH-g and benzene degradation rates determined from monitoring wells MW1, MW-2, and MW-3 suggest that former UST area may still be a source area where natural attenuation was insignificant and/or anaerobic conditions prevailed.
- Data obtained from the second quarter 2005 monitoring event is consistent with that reported from previous quarters. It indicates that hydrocarbon plume is relatively stable.
- Concentration of TPH-g sampled in down gradient well MW-5 seems to reach an asymptotic level of approximately 100 μg/L. Also, concentrations of TPH-g and benzene remained relatively high in wells MW-2 and MW-1.
- Based on the above, a source area likely exists under the subject property.

PROJECT STATUS AND FORECAST ACTIVITIES

Clearwater is going to implement site remediation described in the Remedial Action Plan (RAP) submitted on 7 January 2005 and approved by NCRWQCB on May 13, 2005. Site remediation will include building demolition, hoist removal, soil excavation, off-site disposal, backfill of clean soil, and dewatering of the excavation area. The estimated volume of soil to be excavated has been determined based on the additional soil investigation performed on 25 and 28 January 2005. The investigation results and estimated soil volume were reported in the *Soil Remediation Plan* submitted on 24 February 2005. However, the base map of the site has been recently revised according to the survey results. As a result, the estimated soil volume also has been revised and included in this report. It is anticipated that the application for soil excavation permit will be submitted after the design of new building is available for the application of building permit. Quarterly groundwater monitoring will continue until the site is ready for closure.



CERTIFICATION

This report was prepared under the supervision of a professional State of California Registered Geologist at Clearwater Group. All statements, conclusions and recommendations are based solely upon published results from previous consultants, field observations by Clearwater Group and laboratory analysis performed by a California DHS-certified laboratory related to the work performed by Clearwater Group.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

The service performed by Clearwater Group has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Sincerely,

Clearwater Group

Jim Ho, Ph.D., P.E., CGWP

Principal Engineer

James A. Jacobs, RG# Chief Hydrogeologist/

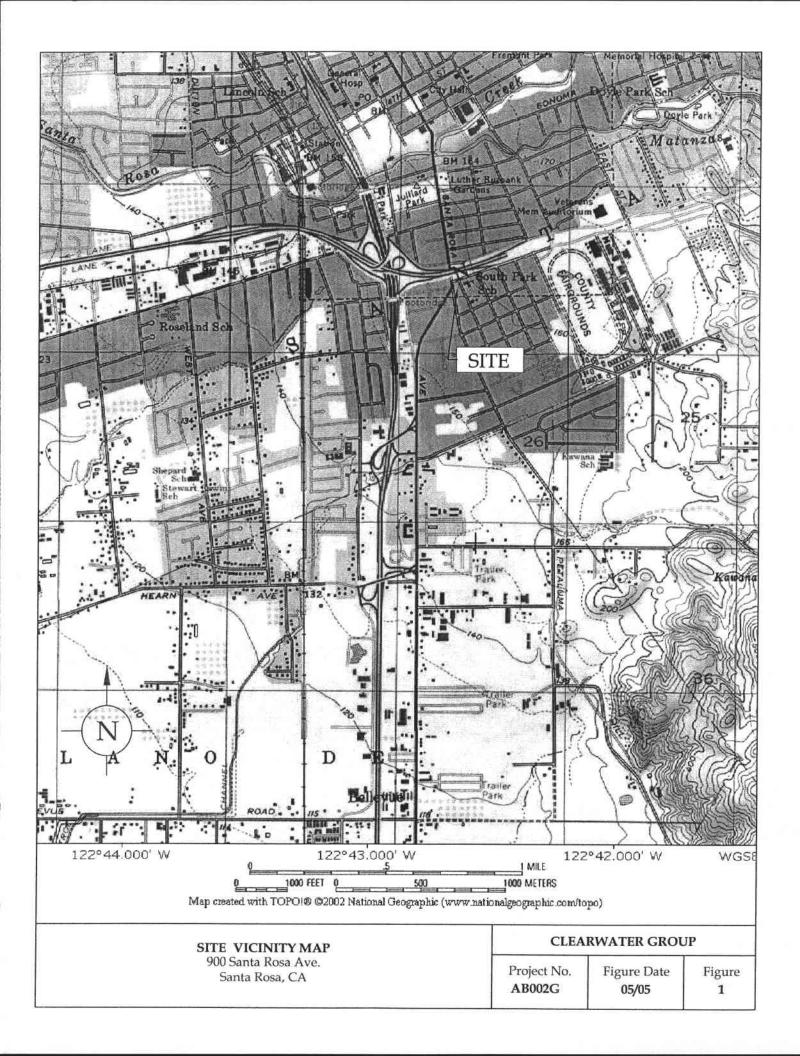
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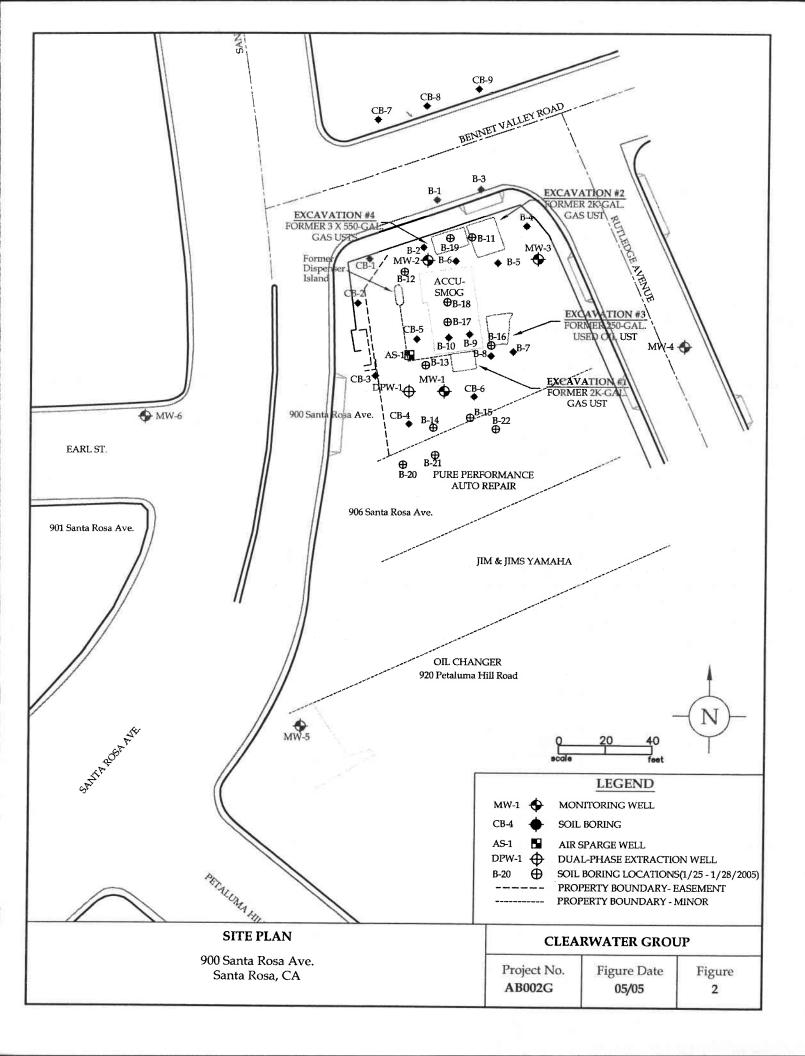
Mr. Franklin Wolmuth, P.O. Box 640551, San Francisco, CA 94164-0551

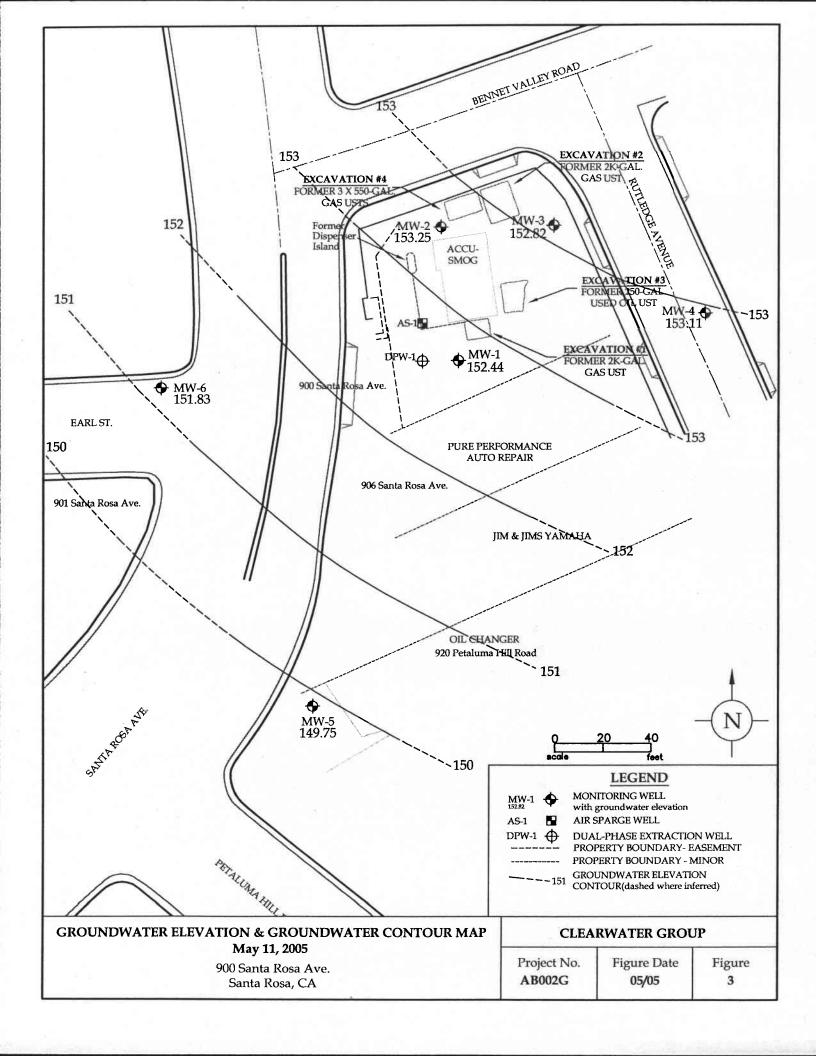
Ms. Andrea Jensen, Santa Rosa Fire Department, 955 Sonoma Avenue, Santa Rosa, CA

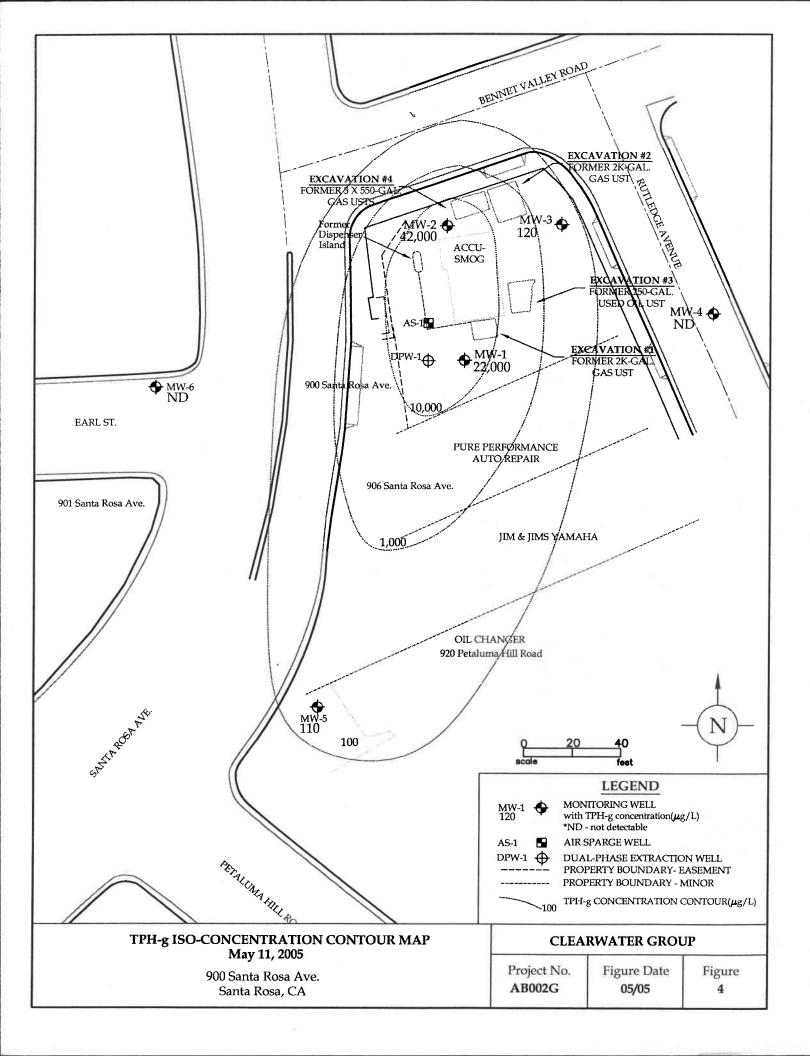
95404

FIGURES









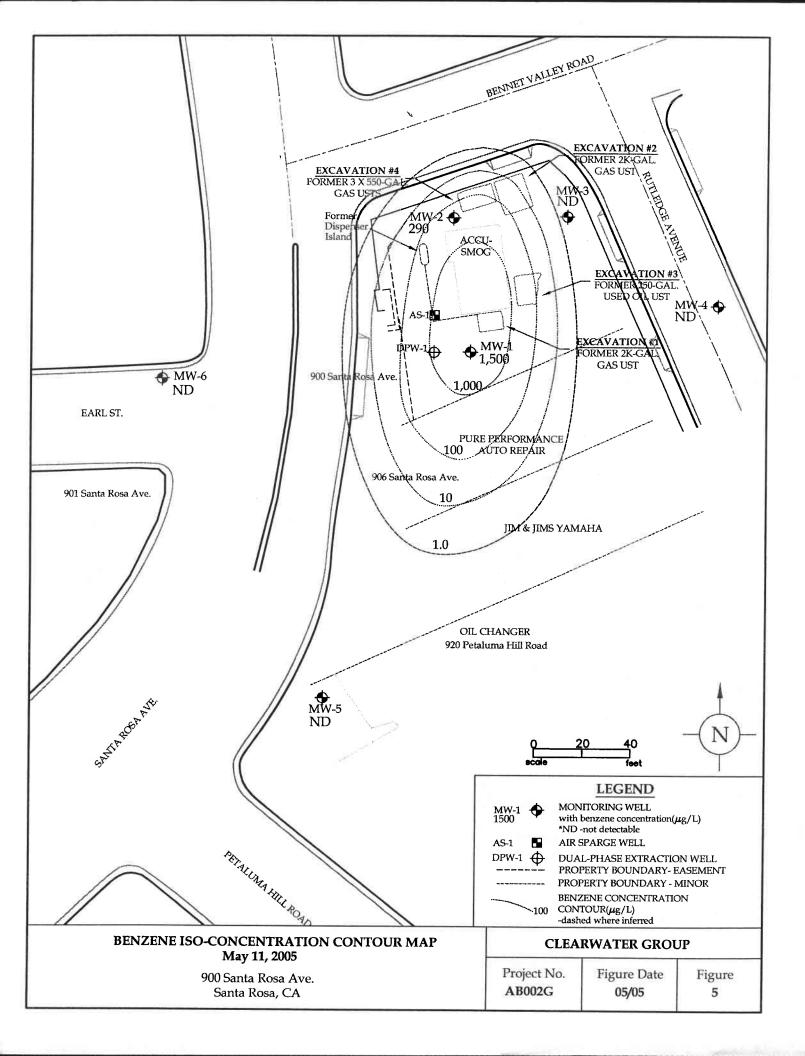


Figure 6A
Empirical Evaluation of First-Order Decay Rates
MW-1: TPHg and Benzene vs. Time



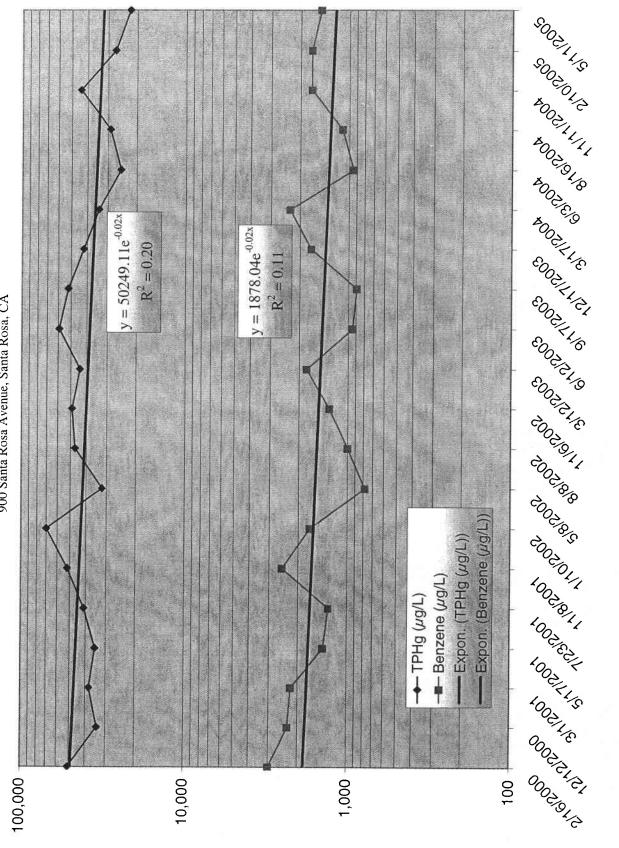


Figure 6B
Empirical Evaluation of First-Order Decay Rates
MW-2: TPHg and Benzene vs. Time



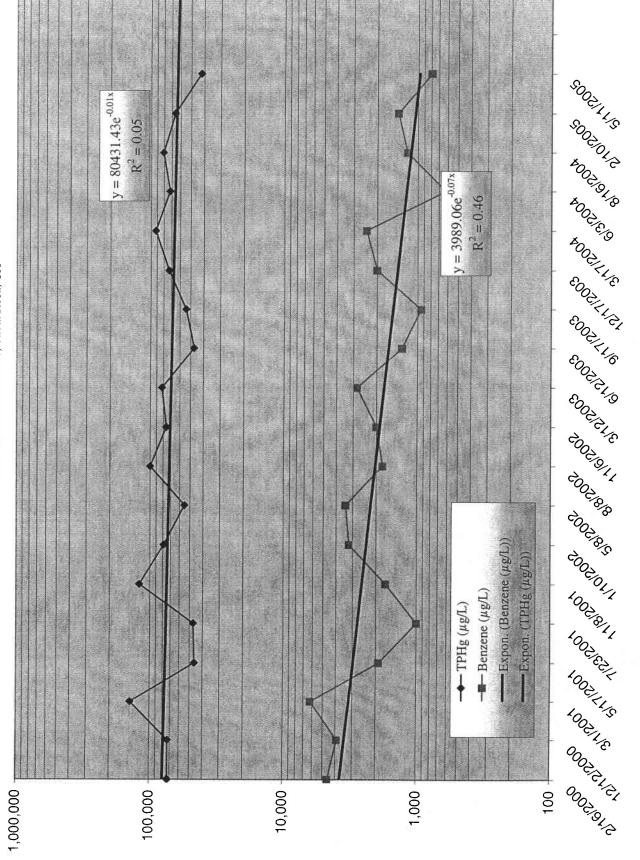
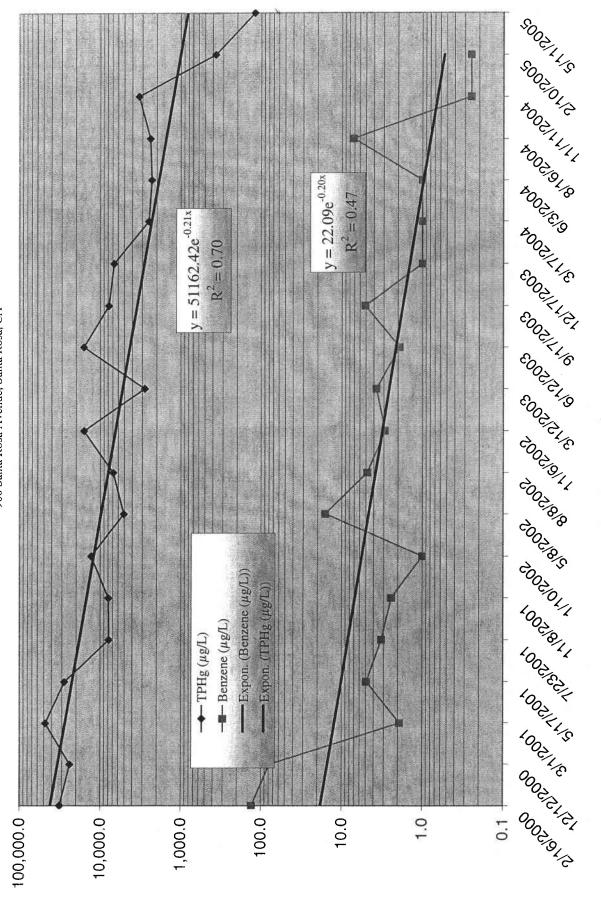


Figure 6C
Empirical Evaluation of First Order Decay Rates
MW-3: TPHg and Benzene vs. Time





TABLES

Table 1 WELL CONSTRUCTION DATA

900 Santa Rosa Avenue Santa Rosa, California Clearwater Project No. AB002C

Well I.D.	Date Intstalled	Borehole Diameter (inches)	Depth of Borehole (feet)	Casing Diameter (inches)	Screened Interval (feet)	Filter Pack (feet)	Bentonite Seal (feet)	Cement (feet)
MW-1	12/30/1993	8	15.0	2	5-15	4-20	3-4	0-3
MW-2	2/14/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-3	2/14/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-4	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-5	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2
MW-6	12/4/2000	8	20.0	2	5-20	4-20	2-4	0-2

Note: All the depths and intervals are measured below ground surface

GROUNDWATER ELEVATIONS AND ANALYTICAL DATA 900 Santa Rosa Avenue, Santa Rosa, California Clearwater Job No.AB002C Table 2

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X (I/oii)	16,000	11,000	9,300	006′9	5,500	2,900	3,500	6,400	4,200	2,100	2,400	3,300	2,200	1,700	2,200	2,100	640	430	009	1,500	410	180	13,000	8,700	13,000	2,700	5,800	11,000	7,400	2,700	2,600	6,500	6,700	4,800	5,400	7,100	5,800	4,400	7,300	1	
E (40/1)	3,200	3,000	3,800	3,300	3,400	2,800	3,200	3,600	2,700	2,600	3,400	3,400	3,100	2,700	3,500	2,700	1,800	1,800	2,300	3,000	2,400	1,800	3,200	2,900	4,000	2,800	2,400	3,300	2,800	3,000	3,800	2,900	3,700	2,900	3,000	3,100	3,100	2,500	4,900	ł	
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gHdT	76,000	44,000	51,000	34,000	38,000	35,000	41,000	52,000	20,000	32,000**	47,000	49,000	44,000	29,000	52,000	42,000	34,000	25,000	29,000	44,000	27,000	22,000	73,000	73,000	140,000	46,000	47,000	120,000	29,000	25,000**	100,000	26,000	82,000	47,000	54,000	2400000 J	92,000	72,000	81,000	ŀ	Page 1 of 4
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GWE (feet)	-	149.85	152.91	148.70	151.69	150.31	148.30	145.64	151.61	150.79	147.35	145.98	151.38	150.90	147.70	147.80	152.03	149.57	146.78	146.93	151.53	152.44	153.99	148.33	151.81	151.05	149.00	146.45	151.12	150.60	148.98	147.41	151.61	151.87	148.64	149.38	152.52	150.32	147.36	148.43	
LNAPL (feet)	0.00	sheen	sheen	sheen	sheen	0.00	0.00	sheen	0.00	0.00	0.00	0.00	0.0	sheen	sheen	sheen	sheen	sheen	sheen	sheen	sheen	sheen	sheen	sheen	sheen	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	sheen	sheen	sheen	sheen	sheen	sheen	0.01	
DTW (feet)	~11.50	10.15	7.09	11.30	6.81	8.19	10.20	12.86	68'9	7.71	11.15	12.52	7.12	7.60	10.80	10.70	6.47	8.93	11.72	11.57	6.97	90.9	5.81	11.47	6.49	7.25	9.30	11.85	7.18	7.70	9.32	10.89	69.9	6.43	99.6	8.92	5.78	7.98	10.94	9.87	
TOC (feet)	160.00	160.00	160.00	160.00	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	158.50	159.80	159.80	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	158.30	
Date	1/7/94+	12/4/1996	2/16/2000	12/12/2000	3/1/2001	5/17/2001	7/23/2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	5/12/2003	6/12/2003	9/17/2003	12/17/2003	3/17/2004	6/3/2004	8/16/2004	11/11/2004	2/10/2005	5/11/2005	2/16/2000	12/12/2000	3/1/2001	5/17/2001	7/23/2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	3/12/2003	6/12/2003	9/17/2003	12/17/2003	3/17/2004	6/3/2004	8/16/2004	11/11/2004	
Well No.	MW-1																						MW-2																		

Table 2
GROUNDWATER ELEVATIONS AND ANALYTICAL DATA
900 Santa Rosa Avenue, Santa Rosa. California

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Pb	Scav.s	THE TO	•	1	1	<2.0	ł	ł	ł	ł	1	1	1	;	}	1	1	ì	. !	ŀ	i		ì		1	<0.50	1	1	ŧ	ł	1	ų	ł	ł	ŧ	1	ł	ł	;	;	1	
,	Oxys	(#B/#)	1	;	;	<2.0 to <20	1	1	ł	1	1	1	ł	;	1	ł	1	1	:	;	:	ì	ı		ł	<0.50 to <5.0	ł	1	}	1	1	ł	1	;	1	1	1	1	1	;	}	
	MIBE ("a(I)	<7.0 <7.0	<7.0						<2.5	<0.50	<25***	<1.0	<20	<0.50	<0.50	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ļ		•	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<5.0	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
;	۲ (۱/۵/۱)	5,300	4,000	2,500	260	310	160	190	72	65	62	15	19	7.4	33.0	6.3	20.0	4.1	5.8	8.0	6.7	<0.5	<0.5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1	E (110/L)	3,400	2,300	1,200	340	240	140	170	74	74	99	23	33	11	22	18	32	∞	8	21	22	<0.5	<0.5	1	05.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
E	1 ("\o'\])	530	370	240	140	10	8.1	2.5	<2.5	2.2	20	1.6	7	<0.50	2.1	<5.0	1.5	<0.5	9.0	3.0	1.2	<0.5	<0.5	i i	\ \ \ \ \ \ \	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
, FOOT	D (110/11)	1,400	230	130	78	<2.0	<5.0	3.2	<2.5	<0.50	16	4.8	<3*** <3***	3.7	1.9	5.1	9.0	<0.5	<0.5	7.2	<0.5	<0.5	<0.5	. 0	05.0>	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
TDII	irng (#9/L)	000′99	42,000	32,000	24,000	48,000	28,000	7,800	2,900	13,000	5,100**	006′9	16,000	2,800	16,000	7,800 J	6,700	2,500	2,300	2,400	3,300	370	120	Ċ	000	20) (20	<50	<20	<50	<50*	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	age 2 of 4
	(no/I)	,	ı	ı	ł	1	ł	t	ì	ł	ı	ì	t	ı	ł	ı	1	ı	ì	ì	t	1	t		ŧ	1	ı	1	1	1	1	1	ł	ı	1	ŧ	ł	ı	ı	ŧ	1	
O TAN	(feet)	152.16	153.25	153.85	147.67	151.98	149.67	146.75	144.19	151.59	150.47	147.08	144.54	151.39	151.70	146.35	148.65	152.09	149.15	145.17	146.83	151.55	152.82	7	147.95	152.35	149.88	146.83	144.45	151.51	151.17	146.93	143.93	151.93	150.76	146.29	148.83	152.50	149.41	145.63	147.26	
IMADI	(feet)	sheen	sheen	sheen	sheen	0.00	0.00	0.00	sheen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	sheen	sheen	0.00	sheen	sheen	sheen	0.00	c	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MTG	(feet)	6.14	5.05	6.63	12.81	7.02	9.33	12.25	14.81	7.41	8.53	11.92	14.46	7.61	7.30	12.65	10.35	6.91	9.85	13.83	12.17	7.45	6.18	7.01	14.19	0.0 4.0	8.81	11.86	14.74	7.18	7.52	11.76	14.76	92.9	7.93	12.40	986	6.19	9.28	13.06	11.43	
TOT	(feet)	158.30	158.30	160.48	160.48	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	159.00	15012	100.12	120.09	120.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	158.69	
Dafe	Care	2/10/2005	5/11/2005	2/16/2000	12/12/2000	3/1/2001	5/17/2001	7/23/2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	3/12/2003	6/12/2003	9/17/2003	12/17/2003	3/17/2004	6/3/2004	8/16/2004	11/11/2004	2/10/2005	5/11/2005	12/17/2000	2/1/2000	5/1/2001	2/17/2001	7 / 23 / 2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	3/12/2003	6/12/2003	9/17/2003	12/17/2003	3/17/2004	6/3/2004	8/16/2004	11/11/2004	
Well	So.			ММ-3																				MIM	FAATAT																	

GROUNDWATER ELEVATIONS AND ANALYTICAL DATA 900 Santa Rosa Avenue, Santa Rosa, California Clearwater Job No.AB002C Table 2

Pb Scav.s	$(\mu g/L)$	ı	ı	ŀ	<0.50	2 1	1	ŀ	1	t	1	ł	ŀ	1	ŀ	;	;	ì	` !	ţ	ı	ł		; i	<0.50	ł	: ;	: 1	1	!	1	1		ł	:	:	:	i	:	1	ł
Oxys	$(\mu g/L)$	1	ł	:	<0.50 to <5.0	}	ì	;	ł	1	ł	1	ł	1	;	ŧ	:	;	ł	1	ł	i		1	<0.50 to <5.0	:	1 1	ŀ	ł	1	ì	;	1	ı	;	:	ŀ	i	ł	1	1
MTBE	(μg/L)	<0.50	<0.50	<5.0*	2.1	1.9	0.52	2.4	2.0	<5.0	09.0	<5.0	1.20	0.97	<0.50	2.10	1.70	0.91	<0.50	<0.50	<0.50	<0.50	بر ج	0.00	0.50	0.00	0.50	<0.50	<5.0	<0.50	<5.0	<5.0	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
×	(μg/L)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0,000	0.07	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.00	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
'n	(µg/L)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	5.0	0.50	70.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
H	(µg/L)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7 57 57	0.00	000 0.50	8.00	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
B	(µg/L)	<0.50	<0.50	3.9	<0.50	<0.50	<0.50	<0.50	7.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5	00.00	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
TPHg	(μg/L)) (}	<50	120+	170	240	09	270	130	190**†	92	<50	150	210	70	<50	160	140	92	79	79	110			S 5	S) (2	<50 <50	<50	<50**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	Page 5504
TPHd	(µg/L)	t	1	ı	ī	ı	ł	1	1	ł	1	ł	1	1	1	ł	t	1	1	1	1	ł	,		I	1	ł	ı	ı	ŀ	ì	ł	ł	ł	1	ı	į	1	ŀ	ł	t
GWE	(teet)	152.07	153.11	145.81	149.47	147.37	144.99	142.60	149.25	147.95	145.38	142.95	148.56	147.87	144.60	146.06	149.13	146.74	143.14	144.38	148.83	149.75	146 40	140.76	148.27	145.98	142.55	149.87	149.34	146.03	143.11	149.28	149.64	144.86	147.09	150.28	147.76	144.11	145.15	149.31	151.83
LNAPL	(teet)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	000	000	8.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DTW	(teet)	79.0	5.58	14.25	60.6	11.19	13.57	15.96	9.31	10.61	13.18	15.61	10.00	10.69	13.96	12.50	9.43	11.82	15.42	14.18	9.73	8.81	12.16	7 33	× × ×	11.11	14.54	7.22	7.75	11.06	13.98	7.81	7.45	12.23	10.00	6.81	9.33	12.98	Z :	8/:/	5.26
TOC	(reet)	130.09	158.69	160.06	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	158.56	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	157.09	15/.09	157.09
Date	2/10/2005	5/ 10/ 2005	5/11/2005	12/12/2000	3/1/2001	5/17/2001	7/23/2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	5/12/2003	6/12/2003	9/17/2003	12/1//2003	3/17/2004	6/3/2004	8/16/2004	11/11/2004	2/10/2005	5/11/2005	12/12/2000	3/1/2001	5/17/2001	7/23/2001	11/8/2001	1/10/2002	5/8/2002	8/8/2002	11/6/2002	3/12/2003	6/12/2003	9/17/2003	12/17/2003	3/17/2004	6/3/2004	8/16/2004	7,10,7004	5/10/2005	5/11/2005
Well	INO.			MW-5																			9MM																		

Table 2

GROUNDWATER ELEVATIONS AND ANALYTICAL DATA

900 Santa Rosa Avenue, Santa Rosa, California Clearwater Job No. AB002C

						Clealw	Cleal water JOD INU. ADOUGO	4DOOZC						ì
Well	Date	TOC	DTW	LNAPL	GWE	ТРН	TPHg	В	H	Ή	×	MTBE	Oxys	Pb Scav.s
S.		(feet)	(teet)	(feet)	(feet)	(μg/L)	(πg/L)	(μg/L)	(μg/L)	$(\mu g/L)$	$(\mu g/L)$	$(\pi g/\Gamma)$	(μg/L)	(µg/L)
CB-1	2/15/2000	ł	1	ı	ŀ	ì	21,000	190	30	450	270	380*	i	:
CB-3	2/15/2000	ł	ł	ı	ŀ	ì	57,000	7.700	1300	2.200	9.500	300*	ł	i
CB-4	2/15/2000	ľ	ł	ŧ	ł	ł	11,000	220	\$2. \$20	280) (1)	<500*	ì	1
CB-5	2/15/2000	ŀ	1	1	1	ł	61,000	8.900	260	4.100	7.800	<500*	ì	
CB-6	2/15/2000	1	1	ł	ł	1	14,000	180	<25	560	08	<250*	1	: 1
CB-7	2/15/2000	ł	ł	1	ı	ł	<50	<0.50	<0.50	<0.50	<0.50	<5.0°	ł	1
CB-8	2/15/2000	ŀ	1	ł	ŀ	ı	<20	<0.50	<0.50	<0.50	<0.50	<5.0*	ł	Ī
Note to	Note to Descriptions:													
Well de	Well designation													
Sample	Sample collection date													
Elevatio	Elevation at the top of the well casing (surveyed to mean sea level)	e well casi	ng (surve)	yed to mean	sea level)									
Depth to water	o water													
Ground	Groundwater table elevation (or potentiometric surface elevation)	tion (or po	tentiomet	ric surface el	levation)									
Light N.	Light Non-Aqueous Phase Liquid gasoline, sheen = <0.01-foot thick	se Liquid g	;asoline, s	heen = < 0.01	-foot thick									
Total Pe	Total Petroleum Hydrocarbons as Diesel by EPA Method 8015M	ubons as I	Diesel by E	3PA Method	8015M									
Total Pe	Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015M or 8260B	urbons as C	Jasoline b	y EPA Meth	od 8015M or	8260B								
Benzene	Benzene, Toluene, Ethylbenzene, and total Xylenes by EPA Method 8020 or 8260B	enzene, ar	nd total X	ylenes by EP.	'A Method 80	20 or 8260B								N
Methyl t	Methyl tert-Butyl Ether by EPA Method 8260B	y EPA Me	thod 8260											
Oxys			Fuel Oxy	genates by E	Fuel Oxygenates by EPA Method 8260B	3260B								
1,2-DCA	1,2-DCA, 1,2-DBA		1,2-Dichlor	roethane and 1	1,2-Dichloroethane and 1,2-Dibromoethane by EPA Method 8260B	ane by EPA	Wethod 8260B							
$\eta g/\Gamma$	micrograms per liter	liter												
ı	Not tested, not measured	neasured												
<	Laboratory reported chromatogram represented a hydrocarbon lighter than diesel (from GPI report)	rted chron	natogram	represented	a hydrocarb	on lighter th	an diesel (fror	n GPI repoi	(‡)					
+	Laboratory reported chromatogram pattern atypical of gasoline	orted chron	natogram	pattern atyp	vical of gasoli	ne								
+	Oil & Grease by SM5520 <5 μ g/L, TPH as Motor Oil by EPA 8015M <5 μ g/L, Total Pb = 26 μ g/L.	SM5520 <	5 μg/L, T	PH as Motor	Oil by EPA	3015M <5 µE	5/L, Total Pb:	$= 26 \ \mu g/L$.						
. 11	MTBE by EPA Method 8020	Jethod 802	50											
*	TPHg by GC/MS	S												
* *	Elevated Detection Limit Reported due	ction Lim	it Report	ed due to d	to dilution factor	or								
1	Elevated Detection Limit for Benzene Reported due to an interfering compound in MW-3.	etton Lim Ia <i>gged</i> wi	it for Ber	ızene Kepo: 1 indicato i	rted due to	an interfer.	ing compour	nd in MW-	က္					
_	ille result is i.	agged w.	יין מווומ	o municale i	t is an estili	are								

APPENDIX A

Groundwater Monitoring and Sampling Procedures

CLEARWATER GROUP

Groundwater Monitoring and Sampling Field Procedures

Groundwater Monitoring

Prior to beginning, a decontamination area is established. Decontamination procedures consist of scrubbing downhole equipment in an Alconox® solution wash (wash solution is pumped through any purging pumps used), and rinsing in a first rinse of potable water and a second rinse of potable water or deionized water if the latter is required. Any non-dedicated downhole equipment is decontaminated prior to use.

Prior to gauging, purging, and sampling a well, caps for all on-site wells should be opened to allow atmospheric pressure to equalize if local groundwater is under confined or semi-confined condition. The static water level is measured to the nearest 0.01 feet with electronic water sounder. Depth to bottom is typically measured once per year, at the request of the project manager, and during Clearwater's first visit to a site. If historical analytical data are not available, with which to establish a reliable order of increasing well contamination, the water sounder and tape will be decontaminated between each well. If floating separate-phase hydrocarbons (SPH) are suspected or observed, SPH is collected using a clear, open-ended product bailer, and the thickness is measured to the nearest 0.01 feet in the bailer. SPH may alternatively be measured with an electronic interface probe. Any monitoring well containing a measurable thickness of SPH before or during purging is not additionally purged and no sample is collected from that well. Wells containing hydrocarbon sheen are sampled unless otherwise specified by the project manager. Field observations such as well integrity as well as water level measurements and floating product thicknesses are noted on the Gauging Data/Purge Calculations form.

Well Purging

Each monitoring well to be sampled is purged using either a PVC bailer or a submersible pump. Physical parameters (pH, temperature and conductivity) of the purge water are monitored during purging activities to assess if the water sample collected is representative of the aquifer. If required, parameters such as dissolved oxygen, turbidity, salinity etc. are also measured. Samples are considered representative if parameter stability is achieved. Stability is defined as a change of less than 0.25 pH units, less than 10% change in conductivity in micro mhos, and less than 1.0 degree centigrade (1.8 degrees Fahrenheit) change in temperature. Parameters are measured in a discreet sample decanted from the bailer separately from the rest of the purge water. Parameters are measured at least four times during purging; initially, and at volume intervals of one well volume. Purging continues until three well casing volumes have been removed or until the well completely dewaters. Wells which dewater or demonstrate a slow recharge may be sampled after fewer than three well volumes have been removed. Well purging information is recorded on the Purge Data sheet. All meters used to measure parameters are calibrated daily. Purge water is sealed, labeled, and stored on site in D.O.T.-approved 55-gallon drums. After being chemically profiled, the water is removed to an appropriate disposal facility by a licensed waste hauler.

Groundwater Sample Collection

Groundwater samples are collected immediately after purging or, if purging rate exceeds well recharge rate, when the well has recharged to at least 80% of its static water level. If recharge is extremely slow, the well is allowed to recharge for at least two hours, if practicable, or until sufficient volume has accumulated for sampling. The well is sampled within 24 hours of purging or repurged. Samples are collected using polyethylene bailers, either disposable or dedicated to the well. Samples being analyzed for compounds most sensitive to volatilization are collected first. Water samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form and placed on ice in a cooler for transport to a state-certified analytical laboratory. Analytical detection limits match or surpass standards required by relevant local or regional guidelines.

Quality Assurance Procedures

To prevent contamination of the samples, Clearwater personnel adhere to the following procedures in the field:

- A new, clean pair of latex gloves is put on prior to sampling each well.
- Wells are gauged, purged and groundwater samples are collected in the expected order of increasing degree of contamination based on historical analytical results.

- All purging equipment will be thoroughly decontaminated between each well, using the procedures previously described at the beginning of this section.
- During sample collection for volatile organic analysis, the amount of air passing through the sample is minimized. This helps prevent the air from stripping the volatiles from the water. Sample bottles are filled by slowly running the sample down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside, the sample container is discarded and the procedure is repeated with a new container.

Laboratory and field handling procedures may be monitored, if required by the client or regulators, by including quality control (QC) samples for analysis with the groundwater samples. Examples of different types of QC samples are as follows:

- Trip blanks are prepared at the analytical laboratory by laboratory personnel to check field handling procedures. Trip blanks are transported to the project site in the same manner as the laboratory-supplied sample containers to be filled. They are not opened, and are returned to the laboratory with the samples collected. Trip blanks are analyzed for purgeable organic compounds.
- Equipment blanks are prepared in the field to determine if decontamination of field sampling equipment has been effective. The sampling equipment used to collect the groundwater samples is rinsed with distilled water which is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory, and are analyzed for the same chemical constituents as the samples collected at the site.
- Duplicates are collected at the same time that the standard groundwater samples are being collected and are analyzed for the same compounds in order to check the reproducibility of laboratory data. They are typically only collected from one well per sampling event. The duplicate is assigned an identification number that will not associate it with the source well.

Generally, trip blanks and field blanks check field handling and transportation procedures. Duplicates check laboratory procedures. The configuration of QC samples is determined by Clearwater depending on site conditions and regulatory requirements.

APPENDIX B

Field Recorded Groundwater Elevation and Purging Data

CLEARWATER WELL GAUGING/PURGING CALCULATIONS GROUP DATA SHEET Date: 11 05 Location: 900 SAMA REA AVE SANTA ROSA, CA 229 Tewksbury Avenue, Job No.: AB0026 Point Richmond, CA 94801 Tel: (510) 307-9943 Fax: (510) 232-2823 Drums on Site @ TOA/TOD Tech(s): Total number of DRUMS used for this event KODNEY BERRY Water: 🕖 Soil: Soil: Water: Well No. Diameter DTB DTW ST CV PV SPL Notes (ft) (in) (ft) (ft) (gal) (gal) (ft) **Explanation: Conversion Factors (cf)**

DTB = Depth to Bottom

DTW = Depth to Water

ST = Saturated Thickness (DTB-DTW) must be > 1 foot

CV = Casing Volume (ST x cf)

PV = Purge Volume (standard 3 x CV, well development 10 x CV)

SPL = Thickness of Separate Phase Liquid

2-inch diameter well cf = 0.16 gal/ft 4-inch diameter well cf = 0.65 gal/ft

6-inch diameter well cf = 1.44 gal.ft

			Ω.	-	GE I	DAT.	1	ŒET				
	10.0		400	SAN	HA	Kos	A AV	-	/	1	Sheet	1 of 2 RODNEY
Job No.://	BOUS	26 Location		ANT	X F	05A	(A	Date:	5/1	1/05	Tech:	SODNEY!
WELL#	TIME	VOL. (gal.)	ORR	H/91 CND	\mathcal{D}_{TMP}	DO	рН	Fe	2+ Fe _T	/		,
MW-2	11110	2,00	NA	2998	18.4	WA	6.9	1 0/	8 No	Sample 1	for:	
Calc. purge	1114	4,00	1	300t	18,3		6.9	1	j	TPHg	TPHd	8260
olume	1119	7.60	W	3001	18.3	V	6.9	11	V	BTEX	MTBI	Metals
6,61										Purging	Method:	
										PVC Bai	ler/Pump/	pisp. Bail
	COMM	ENTS: color,	turbidity	, recharge	e, sheen,	odor						
	CK	AR low	2,90	20,1	B 3/	HEED	M	00	OK	*8		
	POST D	EPTH TO W	ATER:		5.6			SAMP	LE TIME	130	מכ	
WELL#	TIME	VOL. (gal.)	ORP	(High CND	TMP	DO	рН	Fe ²⁴	Fe _T	,		
mw.6	1728	2.00	M	1783	19.40	A/A	7.K	MA	NA	Sample for	or:	
alc. purge	1135	4,00		1720	20.0°	1,	7.00	1/	1/	TPHg)	ТРН	8260
olume	1139	7,00	1/1	693	20.05	ch	7.01	V	W	BTEX	MTBE	Metals
6,94		1 1.5%								Purging M	lethod:	\wedge
	1.									PVC Baile	er/Pump/D	pisp. Baile
	COMMI	ENTS: color, t	urbidity,	recharge,	sheen,	odor		170				
	C/3	ARSIO	w. 90	DOD,	N	3/12	N, K	100	tol			
	20	EPTH TO WA	//	.,	61	,)	,	SAMPL	E TIME:	13	0	
WELL#	TIME	VOL. (gal.)	ORP (High) TMP	DO	рН	Fe ²⁺	Fe_{T}			
MW-5	1151	2,00	NA	1733	19.64	MA	690	1/46	NA	Sample for	•	
alc. purge	1759	4,00	1	17551	9500		6.90	j	1	TPHg	гРНа	8260
lume	138	5,00	V	763/	9.50	$\sqrt{ }$	6.90	V		BTEX I	MTBE	Metals
1.584	100					0		'	W.	Purging M	ethod:	
200										PVC Baile	r/Pump/Di	isp. Bailer
	СОММЕ	NTS: color, tu	rbidity, 1	echarge,	sheen, o	dor						
9	CEA	RI DW	GOPI	O) N/i	She	EN.	Do	300	R			
	235-25-2 4 010-5-20-0	EPTH TO WA	TER:	71	2.50	1	, ,	SAMPL	E TIME:	132	D	

Clearwater Group Inc. - 229 Tewksbury Avenue, Point Richmond, California 94801

ata Sheet.xls Phone: (510) 307-9943 Fax: (510) 232-2823

				PUF	RGE	DAT	A SH	EET	-				
			90	0 5	PHA	to	SA A	VS	,)	Sheet	2 of 2	
ob No.	B002	6 Location	ı: <i>'</i> 5,	ANT.	AK	054	CA	Date:	5/11	105	Tech:	2 of 2 Boring E	FER
WELL#	TIME	VOL. (gal.) ORP	High	h) _{TMF}	DO P	pН	Fe ²	. 5	ř		J	
MW-'	12/1	2.00	A/A	136	20:	I WA	6.7	AT	MA	Sample f	TPHd	8260	
6,23	100	6,50	V	136	120.	4 (/	61	10	+V-	BTEX Purging 1	MTBE	Metals	1
(D) (0-3						10				- 175		isp. Bailer	\triangleright
	COMM	IENTS: color,	turbidity	, recharg	ge, sheen	, odor	J.						-
	0/4	AR, Oc	U, P	DOR,	NO 3	sheen	J, 12	OD C	or	103			
	POST I	DEPTH TO W	ATER:	_	6.2	-3	,	SAMPI	LE TIME	/33	30 <u> </u>		
WELL#	TIME	VOL. (gal.)	ORP(High	TMP	DO	pН	Fe ²⁺	Fe _T				E.
nW-2	122	6	,							Sample fo	r:		1
alc. purge	1235	SMA	11/	AYE	RC	SE	RES :	Roc	lict	TPHg	TPHd	8260)	
olume	124)			ļ			BTEX	мтве/	Metals	
0,96										Purging M	lethod:		
										PVC Baile	er/Pump/Di	sp. Bailer	1
	COMM	ENTS: color,	turbidity	, recharge	e, sheen,	odor							
	BR	wwish	high). P	mp R	Shee	N. V	EBY.	Stat	ing of	OR		
		ЕРТН ТО W	/	11	5,0		1		E TIME:		340	,	
WELL#	TIME	VOL. (gal.)	ORP	High CND	ТМР	DO	pН	Fe ²⁺	Fe_{T}				
りしい	1247	2,00	NA	3917	19.40	1	6184	NA	NA	Sample for	:		
lc. purge	125	3.00		3919	194	- 1	184	1	1/	TPHg	TPHd	8260)	
lume	253	4.50		3924	19.40	cV ,	184	W		BTEX N	MTBE	Metals	
1.08	•	1.0	•				201	V		Purging Me	ethod:		
2.2					20					PVC Bailer	r/Pump/Dis	sp. Bailer	
	COMME	ENTS: color, t	urbidity,	recharge	, sheen, o	odor							
· ·	bEO	evolish	hic	HP	Mas	,5h	EDJ.	SHRO	us c	Dor			
	POST D	EPTH TO WA	TER:	2 1	100	1)	SAMPLI	E TIME:	13	50		

Appendix C

Laboratory Reports Chain-of-Custody Forms



Date: 5/18/2005

Jim Ho Clearwater Group, Inc. 229 Tewksbury Avenue Point Richmond, CA 94801

Subject: 6 Water Samples

Project Name: SANTA ROSA IMPORTS

Project Number: AB002G

Dear Mr. Ho,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Date: 5/18/2005

Project Name :

SANTA ROSA IMPORTS

Project Number: AB002G

Sample: MW-4

Matrix: Water

Lab Number: 43745-01

Sample Date :5/11/2005

	Method			
Measured Value	Reporting Limit	Units	Analysis Method	Date Analyzed
< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
< 50	50	ug/L	EPA 8260B	5/14/2005
98.7 87.1		% Recovery % Recovery	EPA 8260B EPA 8260B	5/14/2005 5/14/2005
	Value < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 98.7	Measured Value Reporting Limit < 0.50 0.50 < 0.50 0.50 < 0.50 0.50 < 0.50 0.50 < 0.50 0.50 < 0.50 50 < 50 50 98.7 98.7	Measured Value Reporting Limit Units < 0.50 0.50 ug/L < 50 50 ug/L 98.7 % Recovery	Measured Value Reporting Limit Units Analysis Method < 0.50 0.50 ug/L EPA 8260B < 50 50 ug/L EPA 8260B 98.7 % Recovery EPA 8260B

Sample: MW-6

Matrix: Water

Lab Number : 43745-02

Sample Date :5/11/2005

Daniel Bale 10/11/2000	Measured	Method Reporting		Analysis	Date
Parameter	Value	Limit	Units	Method	Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	5/14/2005
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	5/14/2005
4-Bromofluorobenzene (Surr)	86.6		% Recovery	EPA 8260B	5/14/2005

Approved By:

Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Date: 5/18/2005

Project Name :

SANTA ROSA IMPORTS

Project Number: AB002G

Sample: MW-5

Matrix: Water

Lab Number: 43745-03

Sample Date :5/11/2005

Sample Date :5/11/2005		Method			
Parameter	Measured Value	Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
TPH as Gasoline	110	50	ug/L	EPA 8260B	5/14/2005
Toluene - d8 (Surr) 4-Bromofluorobenzene (Surr)	101 87.6		% Recovery % Recovery	EPA 8260B EPA 8260B	5/14/2005 5/14/2005

Sample: MW-3

Matrix : Water

Lab Number : 43745-04

Sample Date :5/11/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Toluene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	5/14/2005
TPH as Gasoline	120	50	ug/L	EPA 8260B	5/14/2005
Toluene - d8 (Surr) 4-Bromofluorobenzene (Surr)	101 88.6		% Recovery % Recovery	EPA 8260B EPA 8260B	5/14/2005 5/14/2005

Approved By:

Joe Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Date: 5/18/2005

Project Name: SANTA ROSA IMPORTS

Project Number: AB002G

Sample: MW-2

Matrix: Water

Lab Number : 43745-05

Sample Date :5/11/2005

Sample Date .5/11/2005		Method			
Parameter	Measured Value	Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	790	7.0	ug/L	EPA 8260B	5/16/2005
Toluene	370	7.0	ug/L	EPA 8260B	5/16/2005
Ethylbenzene	2300	7.0	ug/L	EPA 8260B	5/16/2005
Total Xylenes	4000	7.0	ug/L	EPA 8260B	5/16/2005
Methyl-t-butyl ether (MTBE)	< 7.0	7.0	ug/L	EPA 8260B	5/16/2005
TPH as Gasoline	42000	700	ug/L	EPA 8260B	5/16/2005
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	5/16/2005
4-Bromofluorobenzene (Surr)	92.4		% Recovery	EPA 8260B	5/16/2005

Sample: MW-1

Matrix: Water

Lab Number: 43745-06

Sample Date :5/11/2005

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	1500	4.0	ug/L	EPA 8260B	5/17/2005
Toluene	87	4.0	ug/L	EPA 8260B	5/17/2005
Ethylbenzene	1800	4.0	ug/L	EPA 8260B	5/17/2005
Total Xylenes	180	4.0	ug/L	EPA 8260B	5/17/2005
Methyl-t-butyl ether (MTBE)	< 4.0	4.0	ug/L	EPA 8260B	5/17/2005
TPH as Gasoline	22000	400	ug/L	EPA 8260B	5/17/2005
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	5/17/2005
4-Bromofluorobenzene (Surr)	92.2		% Recovery	EPA 8260B	5/17/2005

Approved By:

Joe Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Date: 5/18/2005

Date Analyzed

Analysis Method

Measured Reporting

Value Limit Units

Parameter

QC Report : Method Blank Data

Project Name: SANTA ROSA IMPORTS

Project Number: AB002G

		Method				
No. and a desired to the	Measured	Reporting	D	Analysis	Date	
Parameter	Value	Limit	Units	Method	Analyzed	
Benzene	< 0.50	0.50	ng/L	EPA 8260B	5/14/2005	
Toluene	< 0.50	0.50	ng/L	EPA 8260B	5/14/2005	
Ethyibenzene	< 0.50	0.50	ng/L	EPA 8260B	5/14/2005	
Total Xylenes	< 0.50	0.50	ng/L	EPA 8260B	5/14/2005	
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ng/L	EPA 8260B	5/14/2005	
TPH as Gasoline	< 50	20	ng/L	EPA 8260B	5/14/2005	
Toluene - d8 (Surr)	98.6		%	EPA 8260B	5/14/2005	
4-Bromofluorobenzene (Surr)	89.3		%	EPA 8260B	5/14/2005	
Benzene	0.50	050	/01	EDA 8260B	5/16/2006	
Toluene	050	0.50	1 /01	EDA 8260B	5/10/2005	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.30	0.00	ug/L	EFA 0200B	5/10/2/01/5	
Ethylbenzene	< 0.50	0.50	ng/L	EPA 8260B	5/16/2005	
Total Xylenes	< 0.50	0.50	ng/L	EPA 8260B	5/16/2005	
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ng/L	EPA 8260B	5/16/2005	
TPH as Gasoline	< 50	20	ng/L	EPA 8260B	5/16/2005	
Toluene - d8 (Surr)	98.8		%	EPA 8260B	5/16/2005	
4-Bromofluorobenzene (Surr)	88.9		%	EPA 8260B	5/16/2005	
Benzene	< 0.50	0.50	ng/L	EPA 8260B	5/17/2005	
Toluene	< 0.50	0.50	ng/L	EPA 8260B	5/17/2005	
Ethylbenzene	< 0.50	0.50	ng/L	EPA 8260B	5/17/2005	
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	5/17/2005	
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ng/L	EPA 8260B	5/17/2005	
TPH as Gasoline	< 50	20	ng/L	EPA 8260B	5/17/2005	
Toluene - d8 (Surr)	8.66		%	EPA 8260B	5/17/2005	
4-Bromofluorobenzene (Surr)	85.2		%	EPA 8260B	5/17/2005	

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

QC Report: Matrix Spike/ Matrix Spike Duplicate

Report Number: 43745

Date: 5/18/2005

Project Name: SANTA ROSA IMPORTS

Project Number: AB002G

				Spike	Spiked	Duplicate Spiked	ø.			Spiked	Duplicate Spiked	Dolofiv	Spiked Sample	Relative
Parameter	Spiked Sample	Sample Spike Value Level	Spike Level	Dup.	Sample Value	Sample	Units	Analysis Method	Date Analyzed	Percent Recov.	P. G. G.	Percent Diff.	t Recov. Limit	Diff. Limit
Benzene	43682-05	<0.50	40.0	40.0	42.4	41.6	ng/L	EPA 8260B	5/14/05	106	104		70-130	25
Toluene	43682-05	<0.50	40.0	40.0	41.2	40.6	ng/L	EPA 8260B	5/14/05	103	102	1.54	70-130	25
Tert-Butanol	43682-05	<5.0	200	200	207	204	ng/L	EPA 8260B	5/14/05	103	102	1.23	70-130	25
Methyl-t-Butyl Ether 43682-05	ner 43682-05	290	40.0	40.0	334	331	ng/L	EPA 8260B	5/14/05	102	92.9	9.33	70-130	25
Benzene	43771-03 <0.50	<0.50	40.0	40.0	43.8	41.9	ug/L	EPA 8260B	5/16/05	109	105	4.41	70-130	25
Toluene	43771-03	<0.50	40.0	40.0	43.2	41.5	ng/L	EPA 8260B	5/16/05	108	104	3.98	70-130	25
Tert-Butanol	43771-03	<5.0	200	200	208	208	ug/L	EPA 8260B	5/16/05	104	104	0.151	70-130	25
Methyl-t-Butyl Ether 43771-03	ner 43771-03	<0.50	40.0	40.0	37.1	36.3	ng/L	EPA 8260B	5/16/05	92.8	2.06	2.24	70-130	25 ,
ć	1	i i	(
penzene	43//4-05	<0.50	40.0	40.0	43.2	42.6	ng/L	EPA 8260B	5/17/05	108	106	1.38	70-130	25
Tolnene	43774-05	<0.50	40.0	40.0	42.4	41.9	ng/L	EPA 8260B	5/17/05	106	105	1.25	70-130	25
Tert-Butanol	43774-05	<5.0	200	200	207	203	ng/L	EPA 8260B	5/17/05	104	102	2.02	70-130	25
Methyl-t-Butyl Ether 43774-05	er 43774-05	<0.50	40.0	40.0	36.5	36.6	ng/L	EPA 8260B	5/17/05	91.3	91.6	0.287	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Report Number: 43745

Date: 5/18/2005

Project Name: SANTA ROSA IMPORTS Project Number: AB002G

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ng/L	EPA 8260B	5/14/05	101	70-130
Toluene	40.0	ng/L	EPA 8260B	5/14/05	101	70-130
Tert-Butanol	200	ng/L	EPA 8260B	5/14/05	6.96	70-130
Methyl-t-Butyl Ether	40.0	ng/L	EPA 8260B	5/14/05	97.6	70-130
Benzene	40.0	ng/L	EPA 8260B	5/16/05	104	70-130
Toluene	40.0	ng/L	EPA 8260B	5/16/05	104	70-130
Tert-Butanol	200	ng/L	EPA 8260B	5/16/05	102	70-130
Methyl-t-Butyl Ether	40.0	ng/L	EPA 8260B	5/16/05	92.8	70-130
Benzene	40.0	ng/L	EPA 8260B	5/11/05	102	70-130
Toluene	40.0	ng/L	EPA 8260B	5/17/05	103	70-130
Tert-Butanol	200	ng/L	EPA 8260B	5/17/05	98.7	70-130
Methyl-t-Butyl Ether	40.0	ng/L	EPA 8260B	5/11/05	89.9	70-130

Approved By:

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

02 99 00 For Lab Use Only 3 Chain-of-Custody Record and Analysis Request TAT 12 11/24 11/48 11/72 11/ 11 Lab No. 43745 TOTAL (X) W.E.T. (X) (S.965\1247) bea. Volatile Halocarbons (EPA 8260B) EPA 8260B (Full List) **Analysis Request** Lead Scav. (1,2 DCA & 1,2 EDB - 8260B) 7 Oxygenates (8260B) 5 Oxygenates (8260B) Oxygenates/TPH Gas/BTEX (8260B) Oxygenates/TPH Gas/BTEX (8260B) Remarks: TPH Gas/BTEX/MTBE (8260B) Bill to: (2108M) IiO notoM as H97 (2108M) lesei (M8015) BTEX/TPH Gas/MTBE (8021B/M8015) 81EX (8021B) California EDF Report? X Yes No Recommended but not mandstory to complete this section: Matrix TIOS osizostorszi Michelle Spene **MATER** Sampling Company Log Code: 7 + Time Received by Laboratory: NONE ICE 2795 2nd Street, Suite 300 HNO3 Received by: Received by: HCI Lab: 530.297.4800 Fax: 530.297.4808 Davis, CA 95616 Contair Global ID: SCEEVE AOV Im 04 Date Time Sampling Date rdcopy or PDF To) ANALYTICAL LLC Distribution: White - Lab, Pink - Originator 0 Sample Designation Relinquished by: Relinquished by

Forms/coc 121001.fh9